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EXAMINER

DUONG, THANH P

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/493,350
Filing Date: January 28, 2000
Appellant(s): BREWER ET AL.

Alan B. Clement
For Appellant

MAILED
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GROUP 1700

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/22/05 appealing from the Office action
mailed 11/03/04.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2,323,498	Thompson	07-1943
6,159,001	Kushch et al.	12-2000
5,711,661	Kushch et al.	01-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1, 3, 5, 9-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thompson (2,323,498).

With respect to claims 1, 9, Thompson discloses a furnace comprising:

at least one fired radiant chamber, wherein the chamber is divided into at least two separate independent radiant zones 7, 7' by a dividing means 6;

at least one burner 13 in each zone 7, 7';

a convection chamber 8 in directed communication with the radiant chamber;

at least one independent process coil 9, 10, 9', 10' for each of the zones, wherein each coil extends through at least a portion of the convection chamber 8 and extends into one said zones 7, 7' before exiting said furnace;

a flue 18 for discharging flue gas located at the top of the convection chamber 8 of the furnace; and

a means 17 for independently controlling the radiant burners 13 in each zone 7, 7' (Fig. 1).

With respect to claim 3, the two radiant zones have substantially the same area (Fig. 1).

With respect to claims 5, 10, the diving means 6 is a brick wall (page 1, col. 2, lines 30-44).

Note that intended use, e.g. for cracking two separate and independent feeds, is of no patentable moment in apparatus claims, and therefore instant claims 1, 3, 5, 9-10 structurally read on the apparatus of Thompson.

In any event, since the apparatus of Thompson has a separate and independent coil for each zone, e.g. zone 7 contains coils 10, 9 while zone 7' contains coils 9', 10'; said apparatus is capable of cracking two separate and independent feeds and therefore cracking more than one feed is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system thereof.

5. Claims 2, 4, 8, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (2,323,498).

With respect to claim 2, the apparatus of Thompson is substantially the same as that of the instant claims, but is silent as to whether there may be more than one radiant chamber.

However, it would have been obvious to one having ordinary skill in the art to provide more than one radiant chamber in the apparatus of Thompson since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

The same intended use comments apply.

With respect to claim 4, it would have been obvious to one having ordinary skill in the art to select the size for the zones in the apparatus of Thompson on the basis of its suitability for the intended use as a matter of obvious design choice, absence showing any unexpected results and since it has been held that when the only difference between the prior art device and the claim was a recitation of relative size, and the device with the relative size would not perform differently than the prior art device, the

claimed device was not patentably distinct from the prior art device. In *Gardner v. TEC System, Inc.* 725 F.2d 1338, 220 USPQ 777.

With respect to claim 8, Thompson discloses a means 17 for independently controlling the radiant burners 13 in each zone 7, 7' (Fig. 1). Although Thompson does not explicitly disclose that whether said means may be a fuel regulator, Thompson discloses that said means 17 is for regulating the combustible air which is a part of the combustible fuel/air mixture in the burner 13. Therefore said means is broadly considered as a fuel regulator (note that the instant specification does not define any specific structure for said means (e.g. fuel regulator) to distinguish said means from that of the prior art). Thompson also discloses that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately controlled.

6. Claims 6-7, 11-12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (2,323,498) in view of Kushch et al (6,159,001 or 5,711,661).

The apparatus of Thompson is substantially the same as that of the instant claims, but fails to disclose the specific material of the dividing means as claimed.

However, Kushch et al disclose provision of using Nextel material in furnace art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select an appropriate material, such as ceramic fiber, Nextel in

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the apparatus of Thompson, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, absence showing any unexpected results. *In re Leshin*, 125 USPQ 416.

(10) Response to Argument

In several places of the brief,

1) Appellants argue that Thompson teaches a furnace with an arrangement of fluid conduits in separate combustion zones connected to each other by communal inlet and outlet manifolds. The process coils of Thompson comprise "a plurality of ... conduits 9 and 9' ... which communicate with a plurality of ... conduits 10, 10' to form one continuously connected fluid conduit that is incapable of cracking two separate and independent feedstocks at the same time.

Such contention is not persuasive as the language of the instant claims is not commensurate in scope with such argument, since the language of the instant claim does not require the aspect of cracking two separate and independent feedstocks "at the same time".

Furthermore, as set forth above, the instant claims are directed to apparatus claims wherein intended use, e.g. for cracking two separate and independent feeds, is of no patentable moment therein and also the phrase of process more than one feed stock "at the same time" is not recited in the instant claims.

Also note that since Thompson discloses two manifolds 12, 12', the two feedstocks can be introduced in two manifolds 12, 12' at the same time or can be introduced in the manifold 11 one at a time and therefore meet the instant claims.

Moreover, Thompson further discloses that each of the two zones has means 17 for independently controlling the radiant burners 13 therein (Fig. 1) and that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately and independently controlled. Accordingly, the two zones in Thompson are capable of processing two feedstocks under two different conditions.

2) Applicants argue that Thompson teaches the use of separate inlet and outlet manifolds with separate combustion zones that share fluid conduits 9, 9', 10, 10' to form a continuous series of process coils and therefore can not separately process more than one feedstock at a time because the coils are all connected to reciprocal manifolds.

Such contention is not persuasive as set forth above, the language of the instant claim is not commensurate in scope with such argument, e.g. the instant claims does not require the aspect of cracking two separate and independent feedstocks "at the same time".

3) Appellants argue that Thompson describes a simple furnace capable of heating only one fluid stream that passes through a common manifold into a series of conduits that is shared by the separate radiant zones and therefore Thompson teaches away from the instant claims by only disclosing process coils that are communally connected to one another.

Such contention is not persuasive as set forth above, Thompson discloses that each of the two zones has means 17 for independently controlling the radiant burners 13 therein (Fig. 1) and that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately and independently controlled. Accordingly, the two zones in Thompson are capable of processing two feedstocks under two different conditions.

4) Appellants argue that the examiner's rejection failed to identify in Thompson where each and every element of claims 1-12 are shown, e.g. failed to identify where in Thompson the furnace having at least two separate and independent feedstocks, each separate and independent coil cracking the separate and independent feedstocks to olefin before exiting the furnace.

Such contention is not persuasive as set forth above Thompson does disclose an embodiment in Fig. 1 in which process coil 10 is disposed in zone 7 and process coil 10' is disposed in zone 7', wherein each coil 10, 10' has an extension 9, 9', respectively, the

coils 10, 9 extend through at least a portion of the convection chamber 8 and into said zone 7, 7' before exiting said furnace.

With respect to the two separate and independent feedstocks, as set forth above, the instant claims are directed to apparatus claims wherein an intended use, e.g. for cracking two separate and independent feeds, is of no patentable moment therein.

In any event, since Thompson discloses two manifolds 12, 12', the two feedstocks can be introduced in two manifolds 12, 12' at the same time or can be introduced in the manifold 11 one at a time and therefore meet the instant claims.

Furthermore, Thompson further discloses that each of the two zones has means 17 for independently controlling the radiant burners 13 therein (Fig. 1) and that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately and independently controlled. Accordingly, the two zones in Thompson are capable of processing two feedstocks under two different conditions.

5) With respect to the arguments regarding claims 2, 4, 8, 12, as set forth above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide more than one set of radiant chambers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

6) Appellants argue that the Thompson's reciprocal inlet manifold that is exposed to various conditions of each radiant chamber is precluded from cracking more than one "separate and independent" feedstock at a time.

Such contention is not persuasive because of the same reasons set forth above, the language of the instant claims is not commensurate in scope with such argument, e.g. the cracking of more than one feedstock at a time is nowhere required in the instant claims.

The language in instant claim 1, subsection d only requires that a coil for each zone, each coil extending through a portion of the convection chamber and into one zone.

Thompson in Fig. 1 discloses a process coil 10 disposed in a zone 7 and process coil 10' disposed in another zone 7', wherein each coil 10, 10' has an extension 9, 9', respectively, the coils 10, 9 extend through at least a portion of the convection chamber 8 and into said zone 7, 7' before exiting said furnace and therefore the apparatus of Thompson structurally meets the instant claims.

With respect to the intended use aspect to "at the same time" or "at a time", it should be noted that intended use is of no patentable moment in apparatus claims.

In any event, Thompson discloses one manifold 11 and two manifolds 12, 12', the two separate and independent feedstocks can be introduced into the system through the two manifolds 12, 12' "at the same time" or can be introduced into the system through the manifold 11 "one at a time" and therefore meets the instant claims.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Tom Duong



Conferees:

Glenn Caldarola



Tim Meeks

